Claims

1. A protective circuit for protection against overvoltage for a CAN bus transceiver (TC) designed in voltage terms for a first vehicle electrical system (Vbat1), said transceiver being operated in a second vehicle electrical system (Vbat2) having a voltage several times that of the first vehicle electrical system (Vbat1) either alone or in a two-voltage vehicle electrical system with the first vehicle electrical system (Vbat1) and the second vehicle electrical system (Vbat2),

c h a r a c t e r i z e d i n t h a t

located between the two bus terminals (TCHI, TCLO) of the transceiver (TC) are two diodes (D3, D3') whose cathodes are connected to each other and to a predefined potential (P),

in that a limiting resistor (R3, R4) is located between each bus terminal (TCHI, TCLO) of the transceiver (TC) and the bus line (HI, LO) assigned thereto, and

in that, in order to restore the voltage levels reduced by the limiting resistors (R3, R4) on the bus lines (HI, LO) a first current-mirror circuit (Q1-Q2) is located between the positive terminal (+Vcc) of the supply voltage source (Vcc) of the transceiver (TC) and the first bus line (HI) and a second current-mirror circuit (Q3-Q4) is located between the second bus line (LO) and ground (GND).

2. The protective circuit according to claim 1, characterized in that the value of the predefined potential (P) is within a range between the supply voltage (+Vcc) of the transceiver (TC) and the vehicle electrical system

voltage (Vbat1) for which the transceiver TC is designed.

3. The protective circuit according to claim 1 or 2, characterized in that the predefined potential (P) is the breakdown voltage of a Zener diode whose value is within a range between the supply voltage (+Vcc) of the transceiver (TC) and the vehicle electrical system voltage (Vbat1) for which the transceiver TC is designed.

4. The protective circuit according to claim 1, characterized in that in order to generate the reference current for the first current-mirror circuit (Q1-Q2) and second current-mirror circuit (Q3-Q4), a resistor (R6) and a third transistor (Q5) are inserted between the transistors (Q1 and Q3) of the two current-mirror circuits (Q1-Q2, Q3-Q4), which transistors are arranged in series between the positive terminal (+Vcc) of the supply voltage (Vcc) of the transceiver (TC) and ground (GND).

5. The protective circuit according to claim 4, characterized in that the current-mirror circuits (Q1-Q2, Q3-Q4) are activated and deactivated via the third transistor (Q5) by means of a control signal (st) controlling the transmitting operation of the transceiver (TC).

6. The protective circuit according to one of the claims 1 to 5, characterized in that a series arrangement comprising a Zener diode (D4) and two resistors (R9) and (R10) is located between the bus line (LO) and ground (GND), with the connection point of the two resistors being connected to the base of a further transistor (Q6) whose emitter is applied to ground (GND) and whose collector is connected to the base of the third transistor (Q5), with the two current-mirror

circuits (Q1-Q2, Q3-Q4) being deactivated as soon as the voltage on one of the CAN bus lines (HI, LO) exceeds a specific value determined by means of the series-circuit arrangement of the Zener diode (D4) and the two resistors (R9, R10).

7. The protective circuit according to one of the claims 1 to 6, characterized in that each transceiver of a device (G) connected to the CAN bus (HI, LO) is assigned a protective circuit.